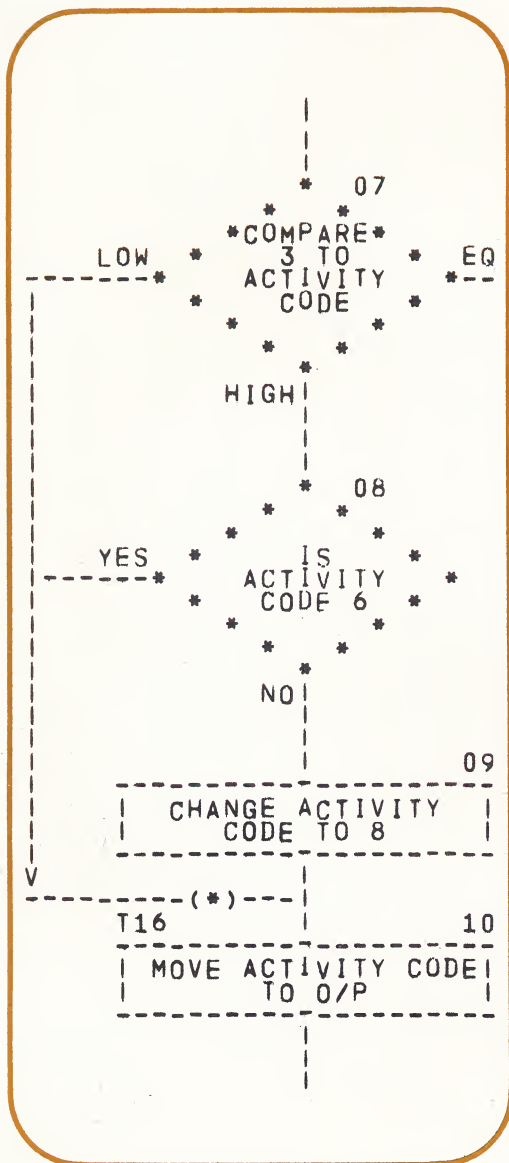


AUTOFLOW*

COMPUTER DOCUMENTATION SYSTEM

- ▲ A TOOL FOR CONTROLLING THE QUALITY AND ACCURACY OF DOCUMENTATION
- ▲ A METHOD OF ESTABLISHING SIMPLE PROGRAM DOCUMENTATION STANDARDS AND RULES



AUTOFLOW is a new software system which produces flow charts and other program documentation from Assembly language input. The AUTOFLOW system has been in operation since January of 1965 at ADR customer installations. The acceptance of this system by both management and programmers has exceeded expectations . . . Applied Data Research is now pleased to announce AUTOFLOW for the

IBM 1401, 1410, 1460 and System/360

RCA 501, and SPECTRA 70

Honeywell 200

The advantages provided by AUTOFLOW for the efficient manager and professional programmer, include:

For Management — AUTOFLOW . . .

- produces program documentation at program completion
- produces accurate flow charts since
 - output is computerized
 - logic is fresh in the mind of programmer
- reduces programming problems related to personnel turnover and reassignment
- permits program documentation to be conveniently updated
- reduces documentation costs
- reduces maintenance costs
- reduces reprogramming costs
- increases productivity of programmers
- enables the computer to detect errors in documentation
- produces flow charts and descriptions conveniently in one output document

For Programmers — AUTOFLOW . . .

- is easy to use
- draws good flow charts
- is readily accepted
- is simple to learn —
 - less than one hour training
- requires virtually no additional effort over the usual coding effort
- relieves the programmer of time-consuming clerical chores
- assists the programmer in debugging
- permits the programmer to more easily change his program

AUTOFLOW can be used for all flow charting requirements at a user installation . . . for assembly language programs . . . or for COBOL or FORTRAN programs using a special format.

With ADR's AUTOFLOW system, the programmer is not required to concern himself with any graphic considerations. AUTOFLOW performs the "manual" work of actually producing a flow chart including allocation of symbols, editing, code rearranging, column and page allocation, and the drawing of connecting lines.

In addition to the flow chart, AUTOFLOW produces the following supplemental documentation aids:

1 Table of Contents

The table of contents for the flow chart output shows the page and box number assignments as well as the source statement card numbers for all tags.

2 Cross Reference Listing

The cross reference listing shows all transfers to all tags in the AUTOFLOW chart. Such a listing is useful during debugging and during maintenance of programs.

AUTOFLOW also permits gross logical flow charts or detailed flow charts to be selectively produced on the high speed printer.

LEASING COSTS

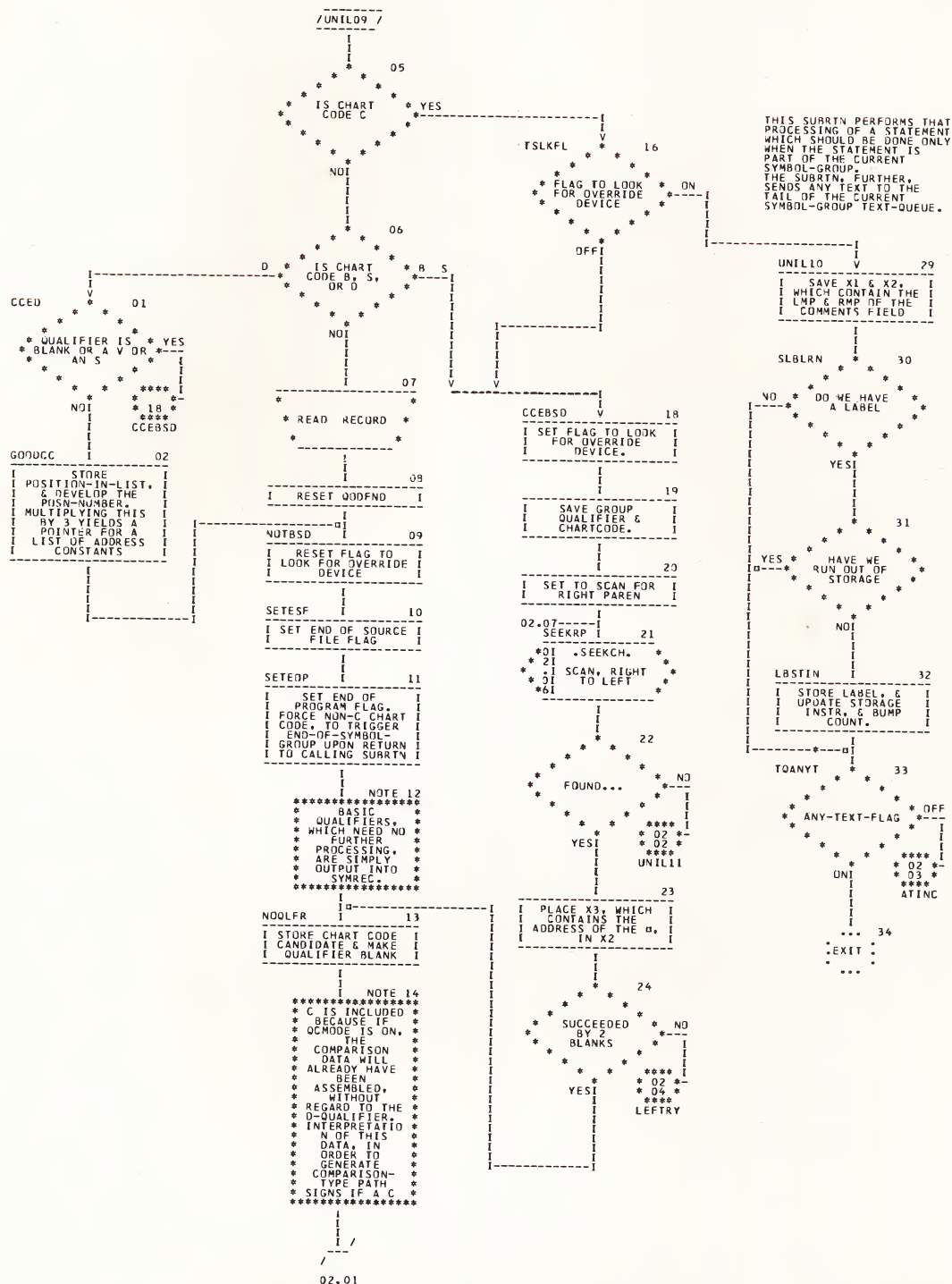
AUTOFLOW is available on the basis of 3 year lease at a low, one-time charge. An ADR representative will be glad to answer your inquiries regarding the price of AUTOFLOW for your system or supply any other information concerning the system. We can be contacted at any of our four offices:

206 Center, Route 206, Princeton, N. J.	609-921-8550
2425 Wilson Blvd., Arlington, Virginia	703-528-3141
5316 West Imperial Highway, Los Angeles, California	213-678-0201
132 W. 31st St., New York, N. Y.	212-524-3192

FLOW CHART CODES

The AUTOFLOW Program makes use of a one or two character code field to determine the contents of the flow charts. These codes are punched to the right of the comments field and are separated from the last word of the comments by two or more spaces.

THIS SUBRTN STORES ANY STATEMENT LABEL, & ALSO ENSURES THAT IF THE FIRST STATEMENT IN THE SYMBOL-GROUP WHICH IS AN INSTRUCTION IS UNLABELLED, A LABEL WILL NOT PRINT ALONGSIDE THE SYMBOL ON THE CHART.



"P"	PROCESS	"N"	NOTE
"C"	CONTINUATION	"R"	TITLE
"S"	SUBROUTINE	"D"	DECISION
"B"	BRANCH	"T"	TEXT
"E"	EXIT	"I"	INPUT/OUTPUT
"H"	HALT		

Line	Label	Operation	Operand
01	02	03	04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20
0.1		UNB	SAMPLE PROGRAM FEB-25-1966
0.2			SECTION ONE R
0.3			THIS SUBROUTINE STATES ANY STATEMENT LABEL, A ALSO
0.4			ENSURES THAT IF THE FIRST STATEMENT OF THE SUBROUTINE
0.5			GROUP WHICH IS AN INSTRUCTION IS UNLABELED, LABEL C
0.6			WILL NOT PRINT ALONGSIDE THE SYMBOL ON THE CHART.
0.7	UNILQ	BCE	TSKFL, CHACQD, C IS CHART CODE C
0.8		BCE	CCED, CHACQD, D IS CHART CODE B, S, OR D
0.9		BCE	CCESB, CHACQD, S (NO, D, R S)
1.0		RT	TABLE, RECARD READ RECORD
1.1		CW	QWENB, R RESET QWENB
1.2		BCE	CCESB, CHACQD, B
1.3	WATSD	CW	LOOKF, RESET FLAG TO LOOK FOR AVERAGE DEVICE
1.4	SETSEF	SW	EESEFL SET END OF SOURCE FILE FLAG

ADR capabilities include:

management sciences

From feasibility study through equipment selection, EDP Department Organization, personnel evaluation to systems design and implementation; our Management Sciences Division has one objective: To assure a successful and economic application of computing equipment to the problem area.

software development

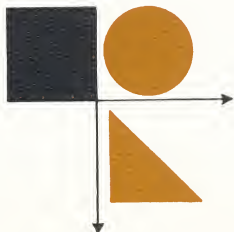
Successful software is the marriage of sound design and impeccable implementation carefully tailored to user requirements and the scope and sophistication of the equipment. We know this because we've been there. We would be glad to discuss our experience and qualifications in report program generators, sorts, assemblers, compilers and executive and multiprogram support systems.

applications programming

Want it quick? we're quick. Want it dirty? It doesn't have to be. We can do a clean job on the first go-around. Scout's honor. We're good implementers not because we have to be but because we want to be. We're good documenters because we have to be. If you have application needs, give us a call. It's fun to work with competent people. Profitable too.

research

Many are called; few are chosen. A few of the chosen reside with us. If you have a special problem in linguistics, information retrieval, theory of compilation or other cognate areas we would enjoy discussing our impressive capabilities along these lines.



APPLIED DATA RESEARCH, INC.

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...now available New Option for AUTOFLOW...

COMPUTER
DOCUMENTATION
SYSTEM



APPLIED DATA RESEARCH, INC.

- Software development
- Management sciences
- Application programming
- Research

FLOW CHART YOUR EXISTING PROGRAMS

Using a new, proven, AUTOFLOW option, you can now process existing AUTOCODER or other assembly language programs and generate a superior quality flow chart. This optional system does not re-

quire special AUTOFLOW codes. However, AUTOFLOW will recognize these codes if they are present in the assembly language input.

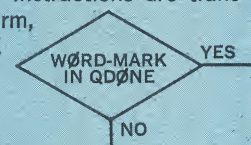
CHARACTERISTICS OF THE AUTOFLOW FLOW CHART

AUTOFLOW FOR ALL PROGRAMS

- Each page and graphic symbol is numbered.
 - two printer sheets equal one page.
 - the number of symbols on a page vary depending on program interaction.
- The size of the symbol is variable depending on program interaction.
 - all editing is performed automatically.
- A page is divided into main and branch columns.
 - a page can contain up to 4 main columns and up to 3 branch columns.
 - columns are centered on a page.
- Graphic symbols representing logical programming units are rearranged by AUTOFLOW so that the program flow can be easily grasped.
 - a main or branch column may have branch columns.
- Branch columns are formed to the left and/or right of a main column.
- Lines are drawn on a page up or down, left or right and in combination of directions.
 - lines that go to the same destination are joined together.

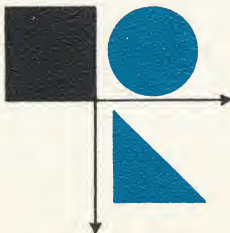
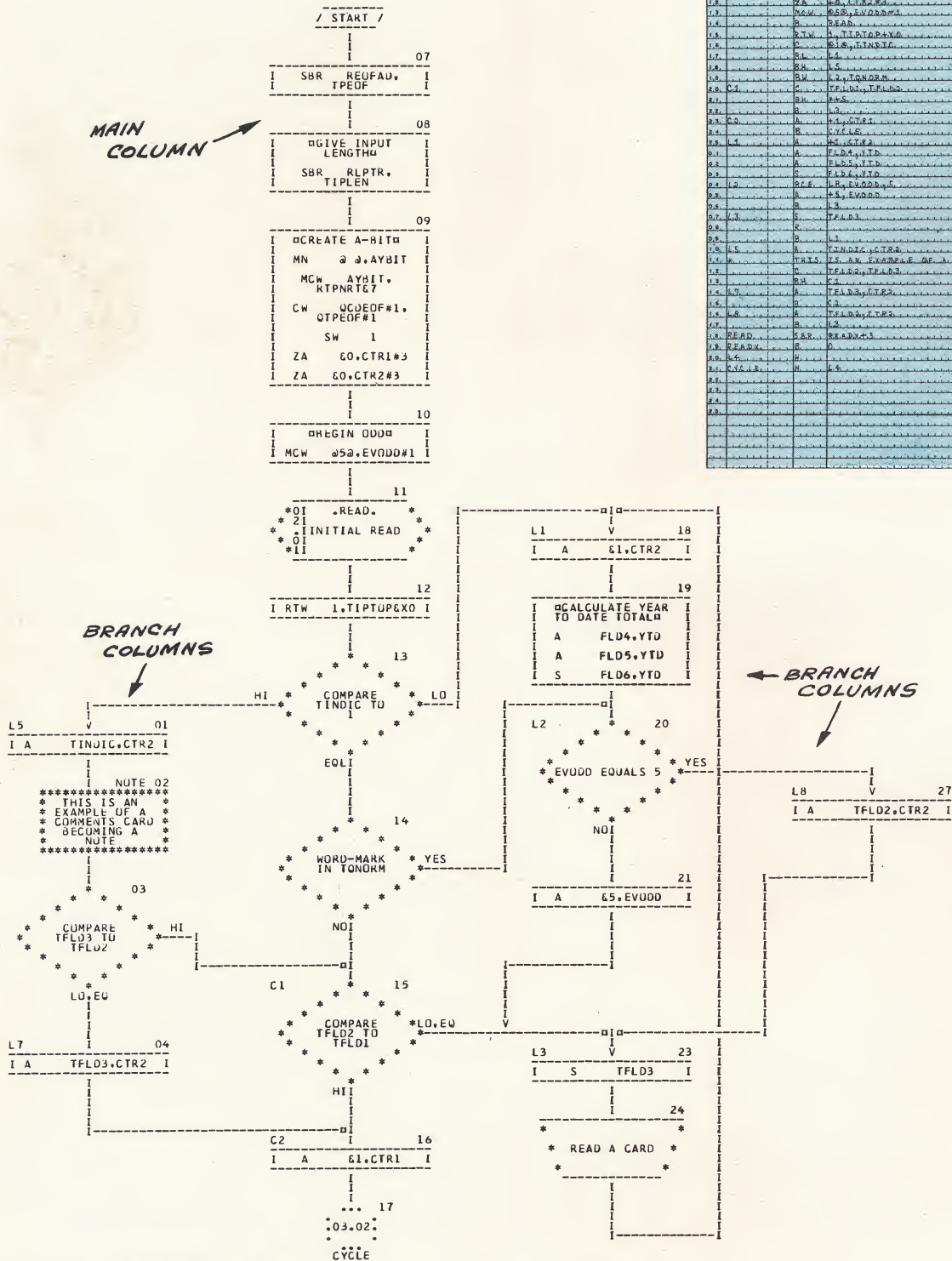
AUTOFLOW FOR EXISTING PROGRAMS

- A comment and one or more instructions are placed together in a process symbol.
- A comment in an instruction line causes a new flow chart symbol.
- A labelled instruction causes a new flow chart symbol.
- Comments cards generate notes or text.
- Standard subroutine linkages are recognized.
- Basic I/O instructions as well as GET and PUT macros generates the I/O symbol.
- Conditional and unconditional Branch instructions are grouped together for the following decision combinations:
 - comparison-type decisions.
 - a conditional branch around an unconditional branch.
- Standard conditional-branch instructions are translated to more readable form, e.g. BW EØPRØG, QDØNE is converted to "WØRD-MARK IN QDØNE"
- AUTOFLOW chart codes, if they appear in the program, are processed.



CHART

EXAMPLE OF HOW AUTOFLOW
WILL FLOWCHART EXISTING
PROGRAMS.



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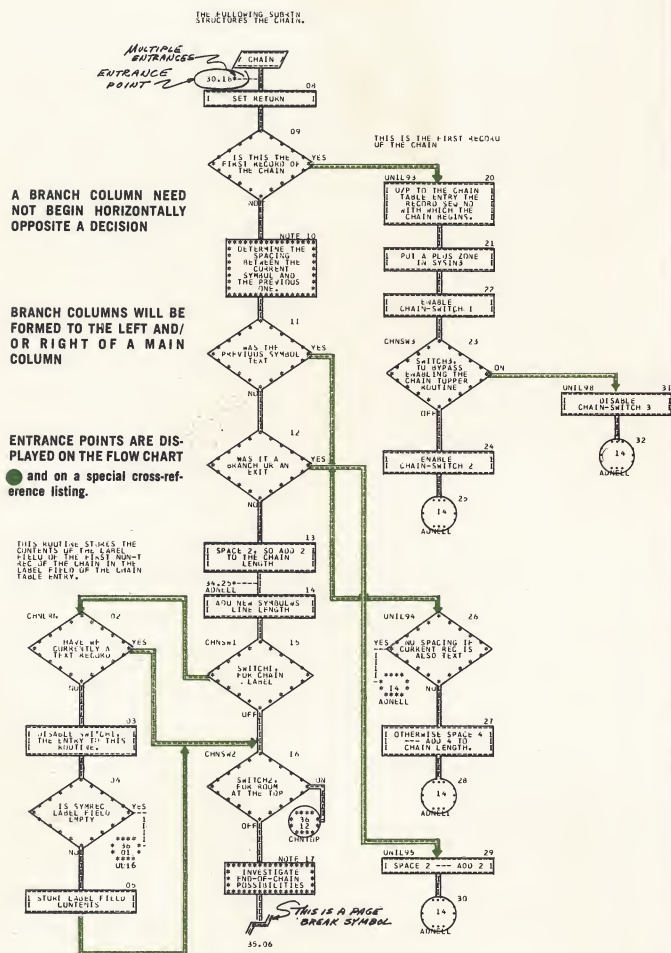
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PROGRAM REARRANGEMENT

PROGRAM APPLIED DATA RESEARCH TEST PROGRAM DEC. 11 1965

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LINE DRAWING

PROGRAM APPLIED DATA RESEARCH TEST PROGRAM DEC. 11 1965

PAGE 09

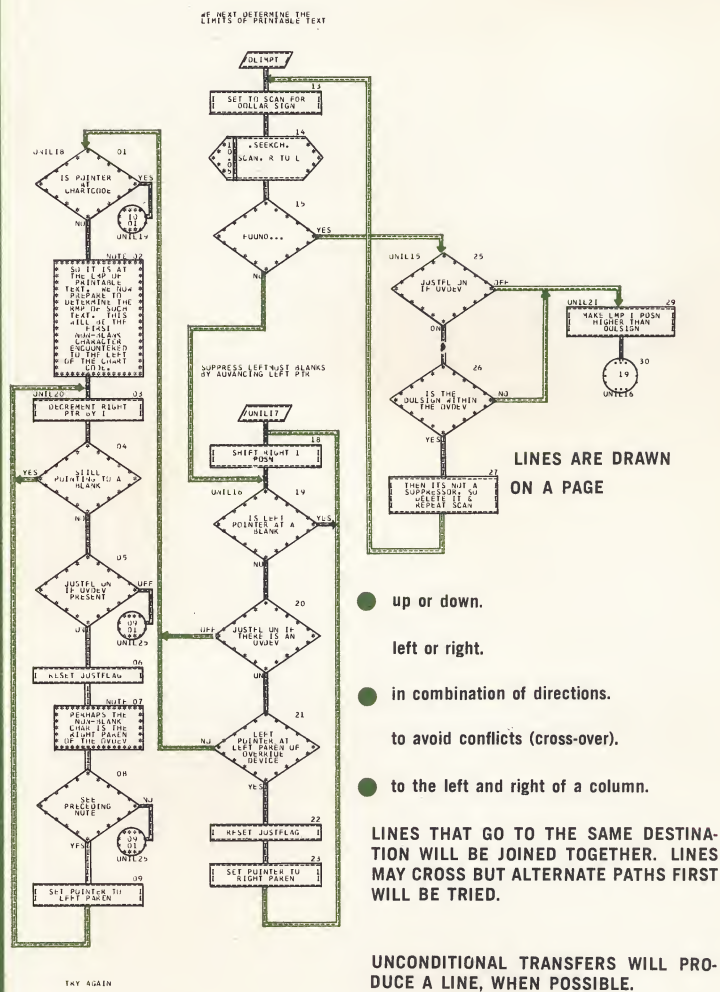
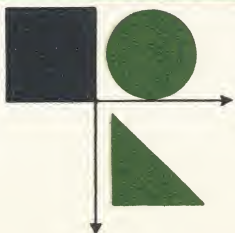


TABLE OF CONTENTS

PROGRAM:	AF52	TABLE OF CONTENTS	02/07/66	PAGE 01
TAG	PAGE	BOX	CARD#	
CHART TITLE:	1005 - MAIN FLOW			
WTM	01	02	0011	
RWD	01	04	0013	
CTRL	01	06	0015	
CHK	01	08	0017	
IN	01	10	0019	
OUT	01	12	0021	
1001	01	22	0036	
1002	01	24	0041	
1033	01	25	0042	
1003	01	29	0047	
1032	01	33	0053	
1034	01	41	0062	
103A	01	42	0064	
1004	01	43	0066	
1005	01	47	0072	
1006	01	48	0074	
1011	02	02	0107	
1012	02	05	0110	

CROSS REFERENCE LISTING

PROGRAM:	AF52	CROSS REFERENCE DICTIONARY	02/07/66	PAGE 01
PAGE/BOX	NAME	REFERENCES		
01.02	WTM	07.03		
01.04	RWD	06.03 06.05 06.07 08.14 09.21		
01.06	CTRL			
01.08	CHK			
01.10	IN	06.32 08.04 09.04 09.10		
01.12	OUT	06.21 06.24 06.29 06.33		
01.22	1001			
01.24	1002			
01.25	1033	01.40		
01.29	1003			
01.33	1032			
01.41	1034	01.33 01.34		
01.42	103A	03.07		
01.43	1004			
01.47	1005			
01.48	1006	01.31		
02.02	1011	02.13		



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